

Q Water Filtration Solutions



**MADE IN
TAIWAN**

Climate Change

Uncertainty of rainfall sometimes causes heavy flood

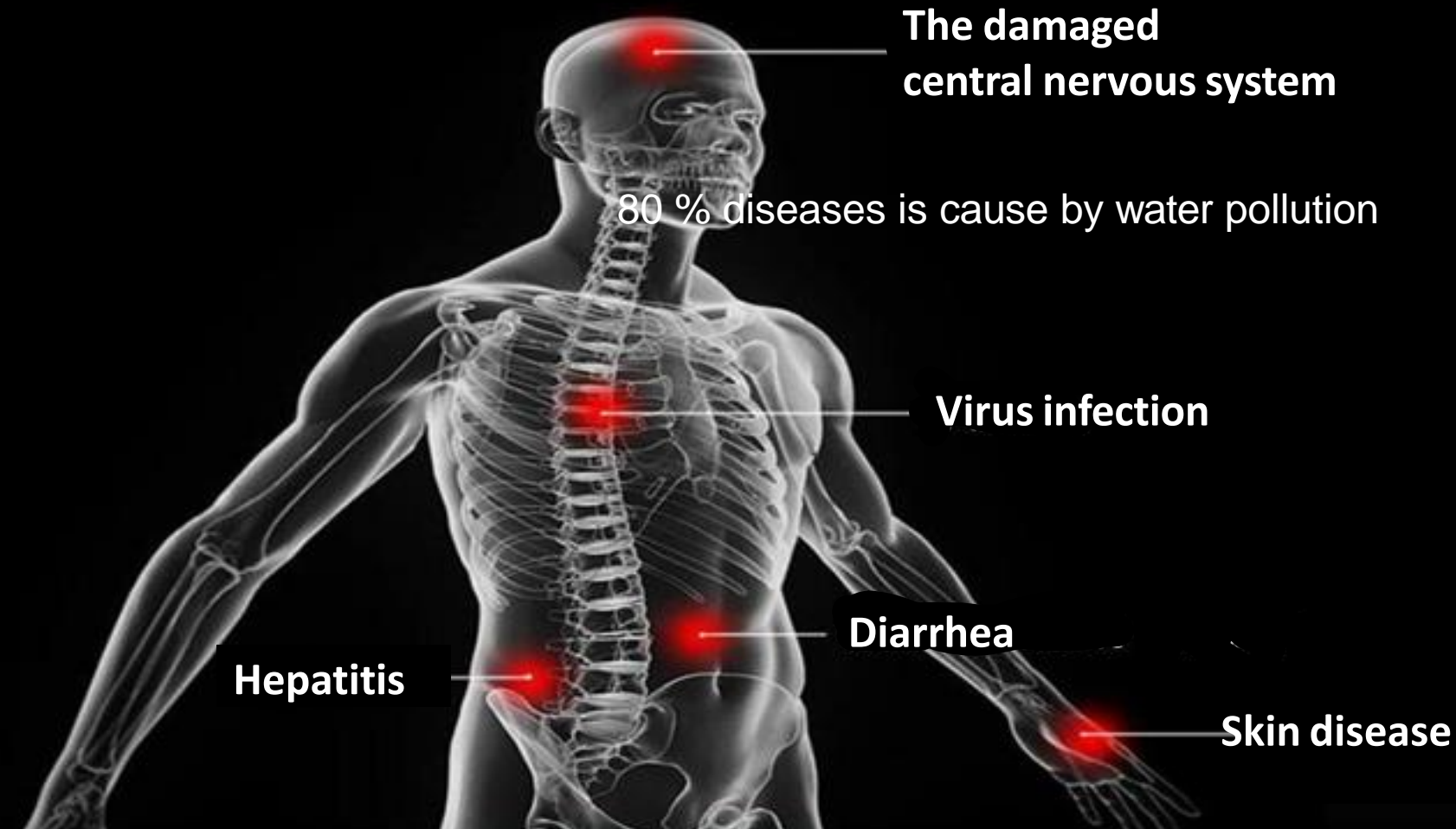




7.8 hundred million people of the world
without clean water

**Unclean water result in 1.1 Million
Children died every year**

80 % diseases is cause by water pollution



Conventional water treatment plant is difficult to apply in remote area or developing country



We Can Impact



WHAT IS QWATER?

Emotional feeling when stimulated by stimulus in the environment. We will design the right product in keeping with customer's requests.



Q Water Function

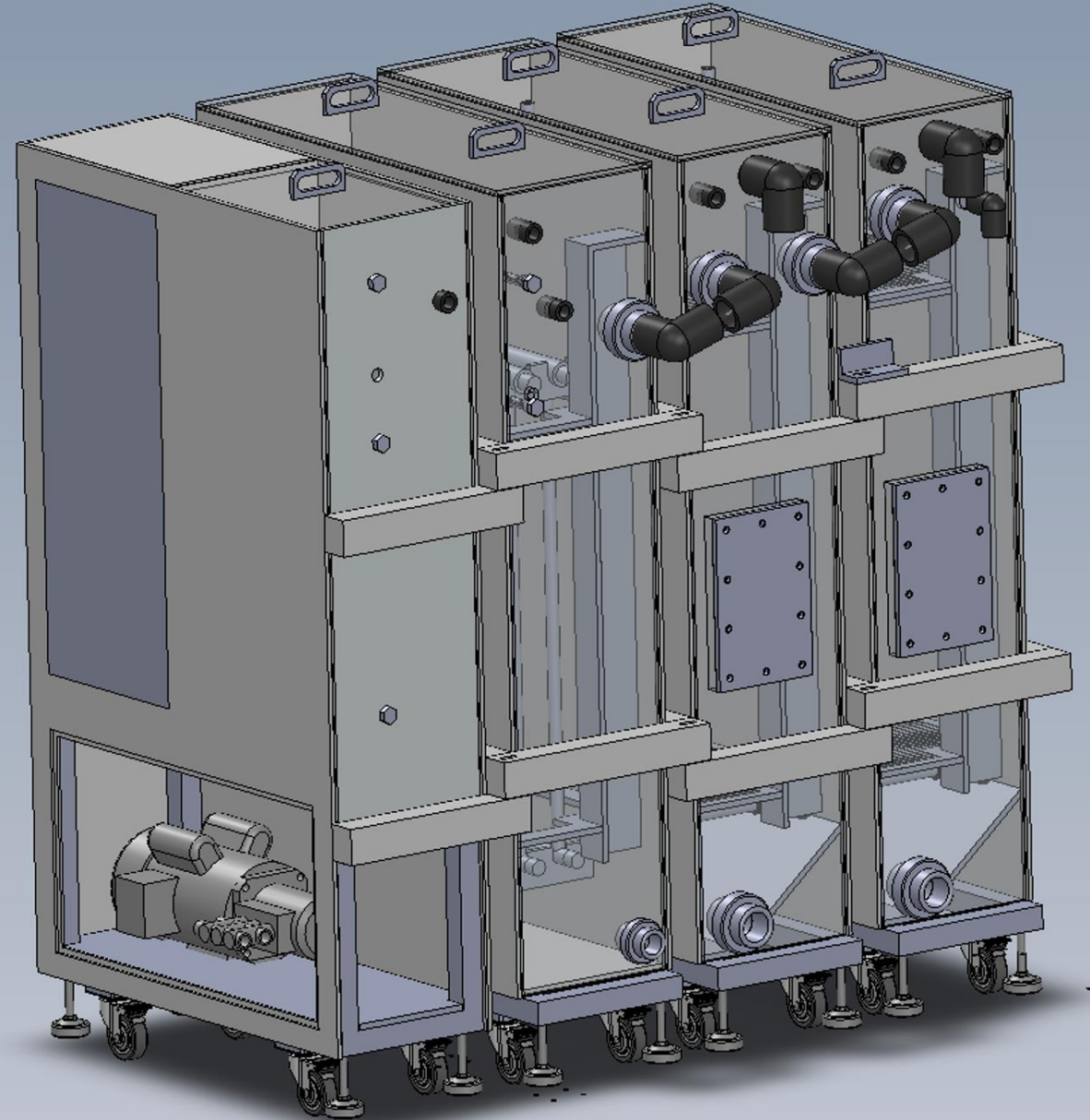
It is easy to move, easy to install and can filter sea water,
river water and ground water

Decentralized-mobile 、 Desalination 、 Fresh water plants.



Q Water Structure Core Technology

- Module Motorization.
- Pipeline Grooving.
- Process flexibility.
- Quick connection.
- Simplified Control.



Q Water system

- ✓ **Quick:** The system is easy to assemble in **20 mins** by two persons.
- ✓ **Quality:** The quality of effluent is conform to the drinking water regulations with **high water turbidity (< 3,000 NTU)** of influent.
- ✓ **Quantity:** The production is **15 m³/day** in the small (2.5 m³) space. It can provide clean water to at least 60 persons of community.

BioNET

- PU
- Surface area: 1,250 m²/m³



Activated carbon

- granular



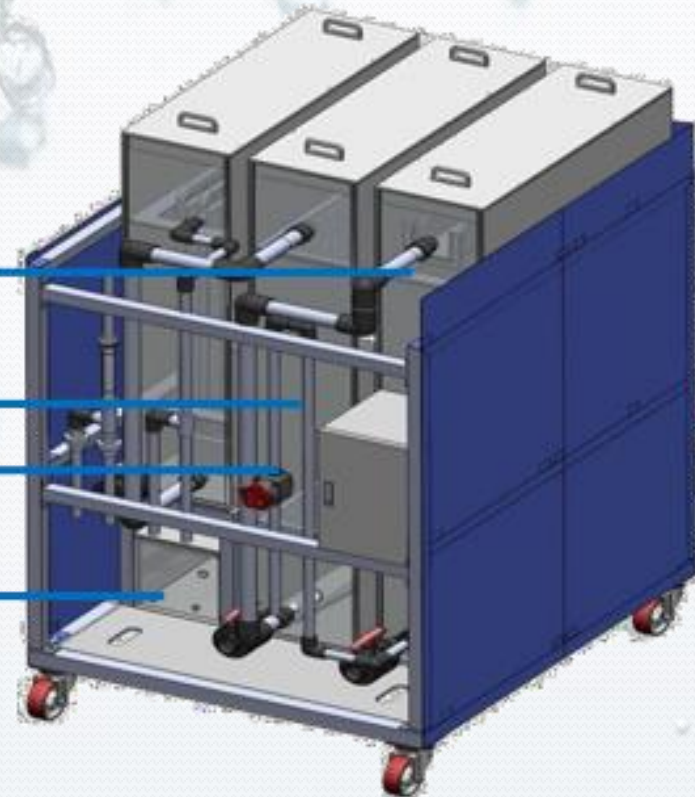
UF membrane

- PVDF
- pore size: 0.08 μm
- area: 30 m²



UV

- 254 nm



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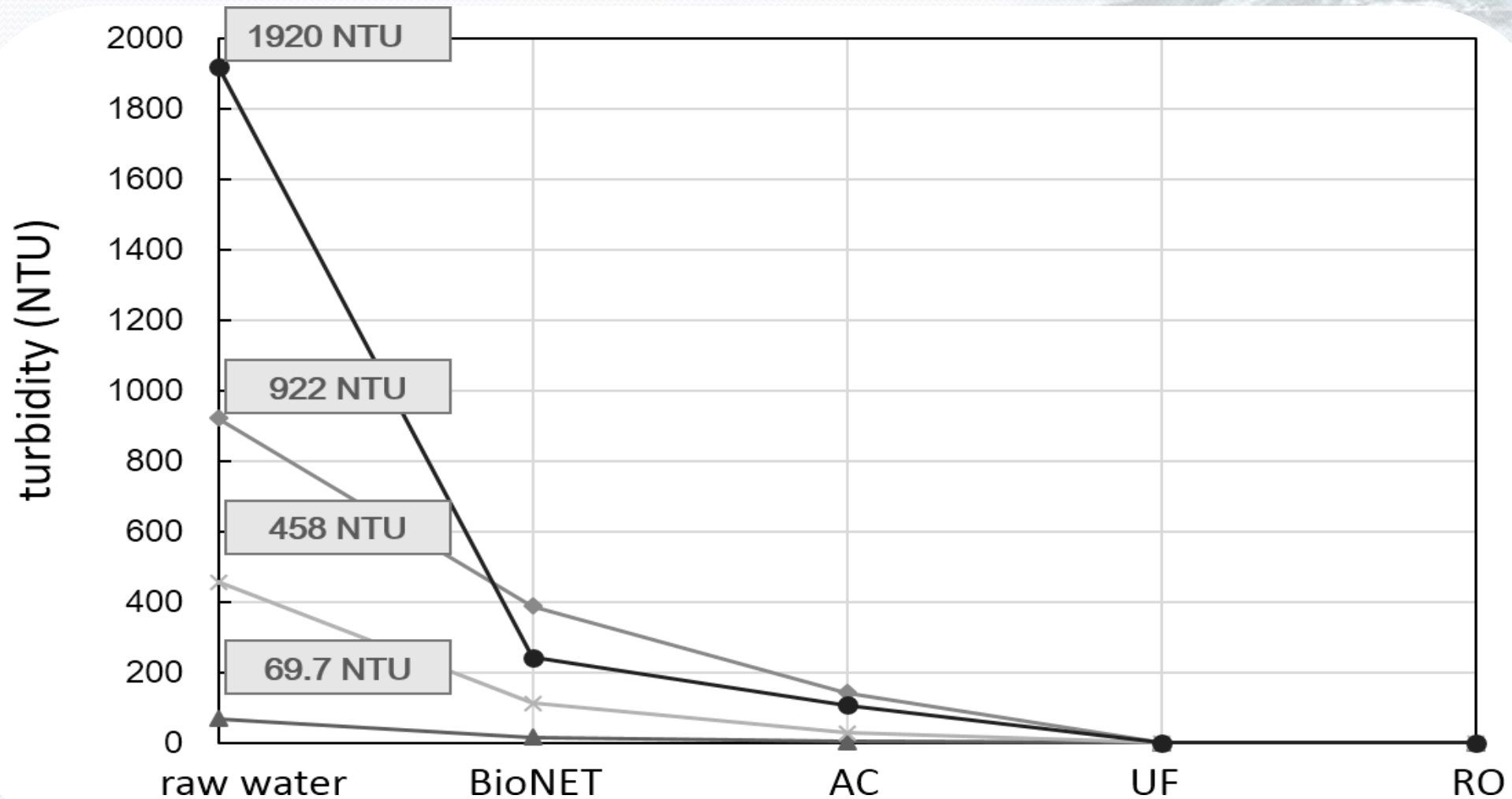
Q Water Operate

Only need to press a button, fully automatic start operation



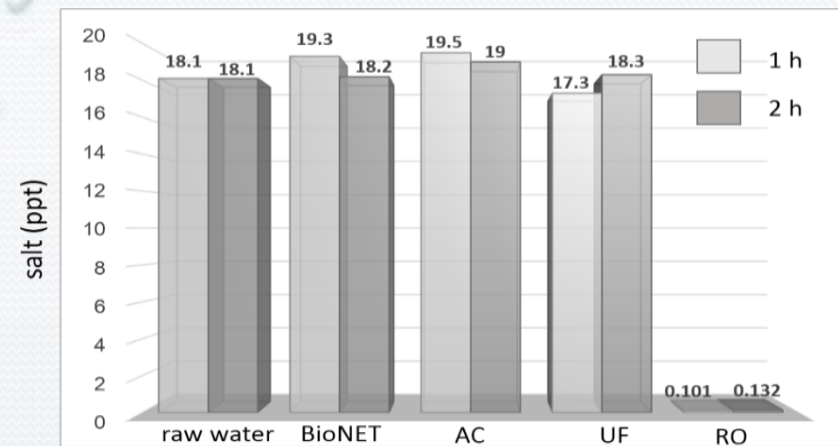
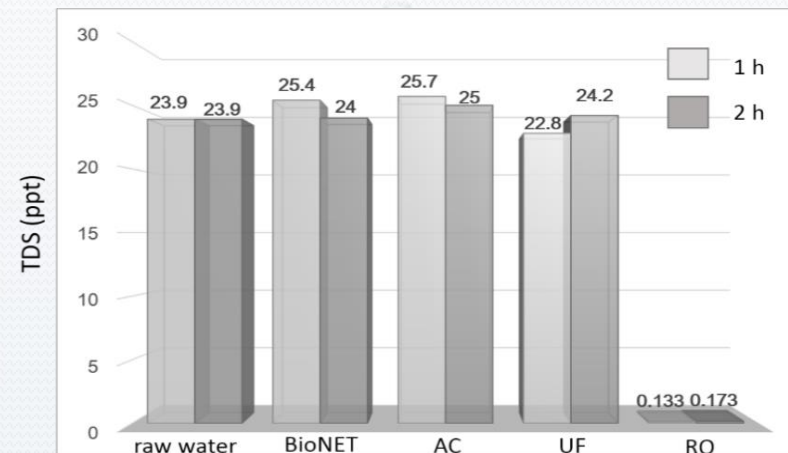
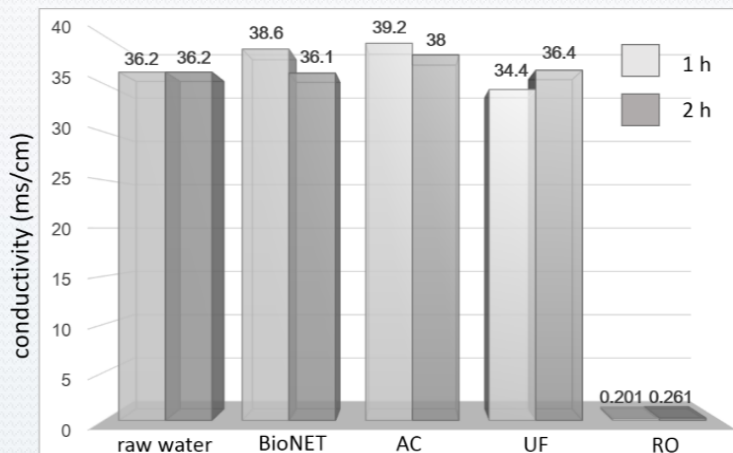
Turbidity Testing

- All water outputs' turbidity are less than 2 mg/L



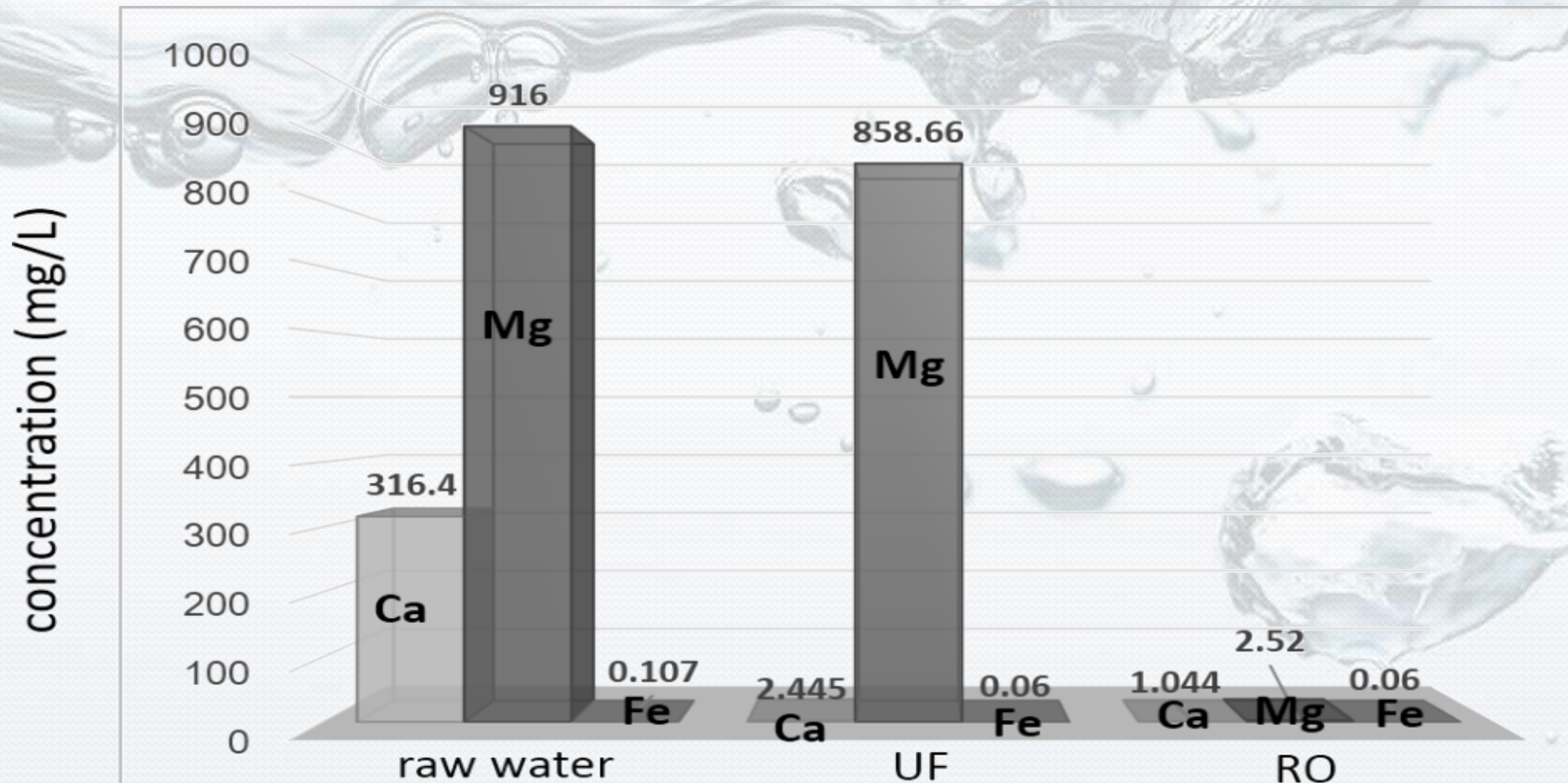
Desalination Testing

- Seawater's raw water conductivity, salinity and TDS is 36.2 ms/cm, 18.1 ppt and 23.9 ppt respectively.
- Water output's conductivity reduce to 201 $\mu\text{s}/\text{cm}$, salinity to 101 ppm and TDS to 0.13. The desalination percent reach 99%.
- RO recovery rate is 35% and water output 5 CMD.
- RO motor operation force is about 54 kgf/cm^2
- Each 100 mg/L increase in salinity will cause 0.07 kgf/cm^2 pressure on permeable membrane.



Desalination Testing

- Seawater hardness ~ 4,500 ppm (as CaCO_3).
- Water output: Calcium concentration **1.044 mg/L**; magnesium **2.52 mg/L**.
- Total hardness is less than drinking water standard of **300 mg/L** (as CaCO_3).

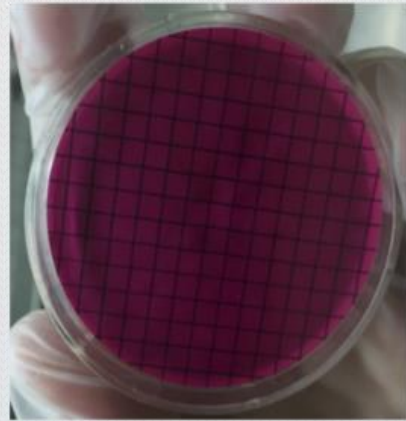
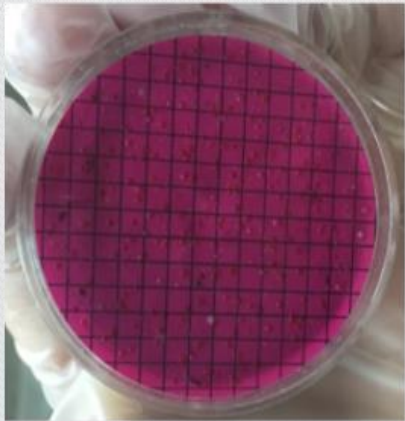


Desalination Testing

- ▶ Water outputs' total bacteria is less than 1 CFU/mL.
- ▶ E. coli less than 1 CFU/100mL.

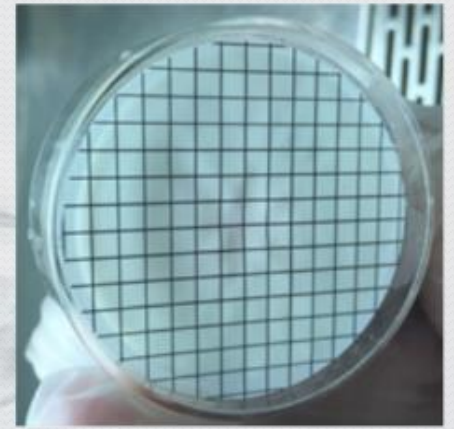
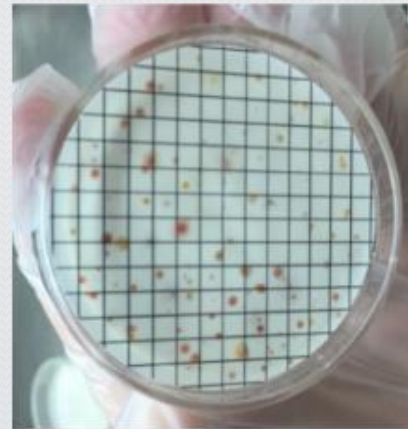
原水 1.3×10^4 CFU/100 mL

出水 <1 CFU/100 mL



原水 1.3×10^4 CFU/mL

出水 <1 CFU/mL

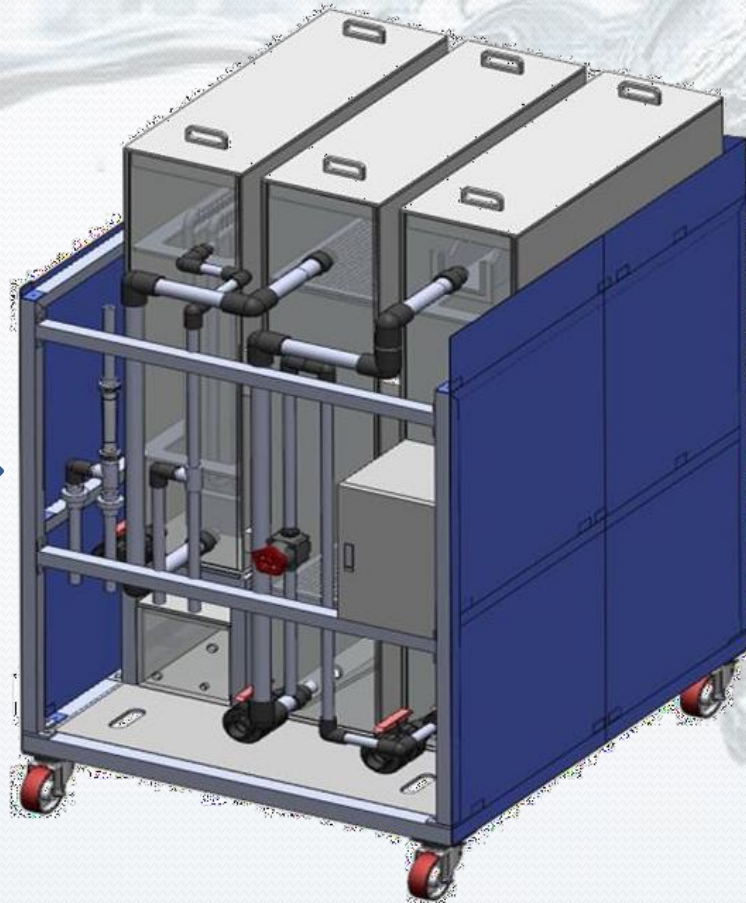
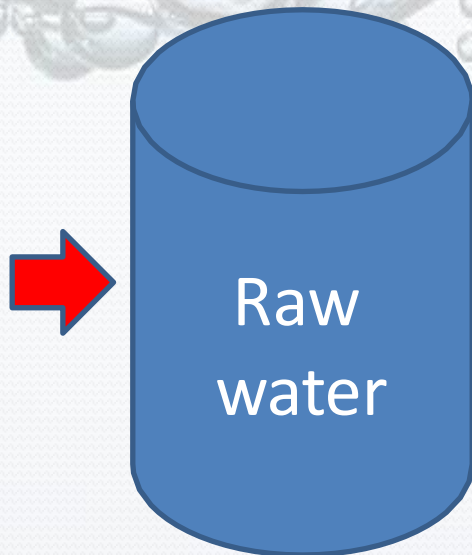


Q Water Application

- 1. Rural areas:** In many remote areas, water pipes cannot reach residents, and residents often do not have a reliable source of drinking water.
- 2. Disaster relief:** After wind disasters and floods, the turbidity of water sources increases or the drought period that has not rained for a long time requires treatment of alternative water sources.
- 3. Sea water desalination:** The seaside groundwater is salinized due to seawater intrusion, or yachts and fishing boats need simple seawater desalination systems.
- 4. Sewage purification:** In order to improve water utilization, lakes, rivers, and rainwater can be effectively upgraded to drinkable water quality standards after being treated by Q-Water equipment.
- 5. Aquaculture fish farming:** The water quality of the aquaculture pond is often improved by constantly changing the water, which also causes the aquaculture industry to extract groundwater as a water source for water exchange. In view of pumping land into the water, it is easy to cause ground subsidence. Therefore, the government actively guides the industry and focuses on promoting the cultivation of circulating water.
- 6. Schools, community buildings, hospital units, etc.:** According to the World Health Organization, 80% of diseases and 50% of diseases are related to poor drinking water quality. The demand is becoming more and more urgent. To meet such needs, water purification equipment is widely used in hotels, hotels, restaurants, schools, hospitals, etc. Hospitals, service areas, office buildings, canteens, factories and other units have become industries with new development trends.

Q Water small system Solution

Brackish water convert to Drinking Water each set create 5,000 to 10,000 L/each day
Can supply 1,600 ~ 3,300 people/each day.

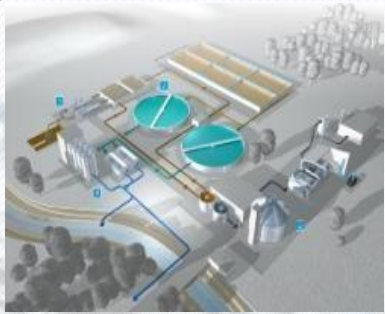


Q-Water 20 feet Container Solution

Brackish water convert to Drinking Water each set create 120,000 L/each day
Can supply 40,000 people/each day.



Q water system Compare with Conventional-1



Conventional

- Expensive
- Large space
- Professional operation



Q Water

- Economical module
- Small size and easy transportation
- Simple operation



Q Dews

- Compact module
- Resource saving process
- Remote monitor and control

Q water system Compare with Conventional-2

Conventional system :
Centralized huge desalination plant



Our project : Q water Seawater
decentralized desalination plant



Cost	Expensive	Reasonable n Acceptable
Distribution system	Need	None
Energy demand	Higher	Lower
Maintenance	Difficult	Easier
Operation	Need professional engineer	Easy to training local people and operation
Mobile	Fixed point	Yes, it can change place
Risk of stop water supply	Higher	Lower

International Patent Right

Qwater 專利

USA (668263)

Netherland NL (1019528)

China CN (ZL01140206.7)

Taiwan (206418)



CE Certificate

C E R T I F I C A T E



of Conformity
EC Council Directive 2006/42/EC
Machinery

Registration No.: AM 50287428 0001

Report No.: 11034537 001

Holder: Industrial Technology Research
Institute (ITRI)
No. 321 Kuang Fu Rd., Sec. 2.
Hsinchu 30011
Taiwan, R.O.C.

Product: Commercial Machine
(Water Cleaning System)

Identification: Qwater/5 CMD, Qwater/15 CMD
Serial No.: QWATER-05-1401 (Qwater/5 CMD)
Rated Voltage : AC 230V~, 50/60Hz, 3 Phases
Rated Power : 2kW
Protection Class: I

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. This is to certify that the tested sample is in conformity with all provision of Annex I of Council Directive 2006/42/EC, referred to as the Machinery Directive. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex II of the Directive.

Date 07.07.2014



Certification Body

Dipl.-Ing. W. Feuker

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE

C E R T I F I C A T E



of Conformity
Low Voltage Directive 2006/95/EC

Registration No.: AN 50287430 0001

Report No.: 11034537 002

Holder: Industrial Technology Research
Institute (ITRI)
No. 321 Kuang Fu Rd., Sec. 2.
Hsinchu 30011
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Date 07.07.2014



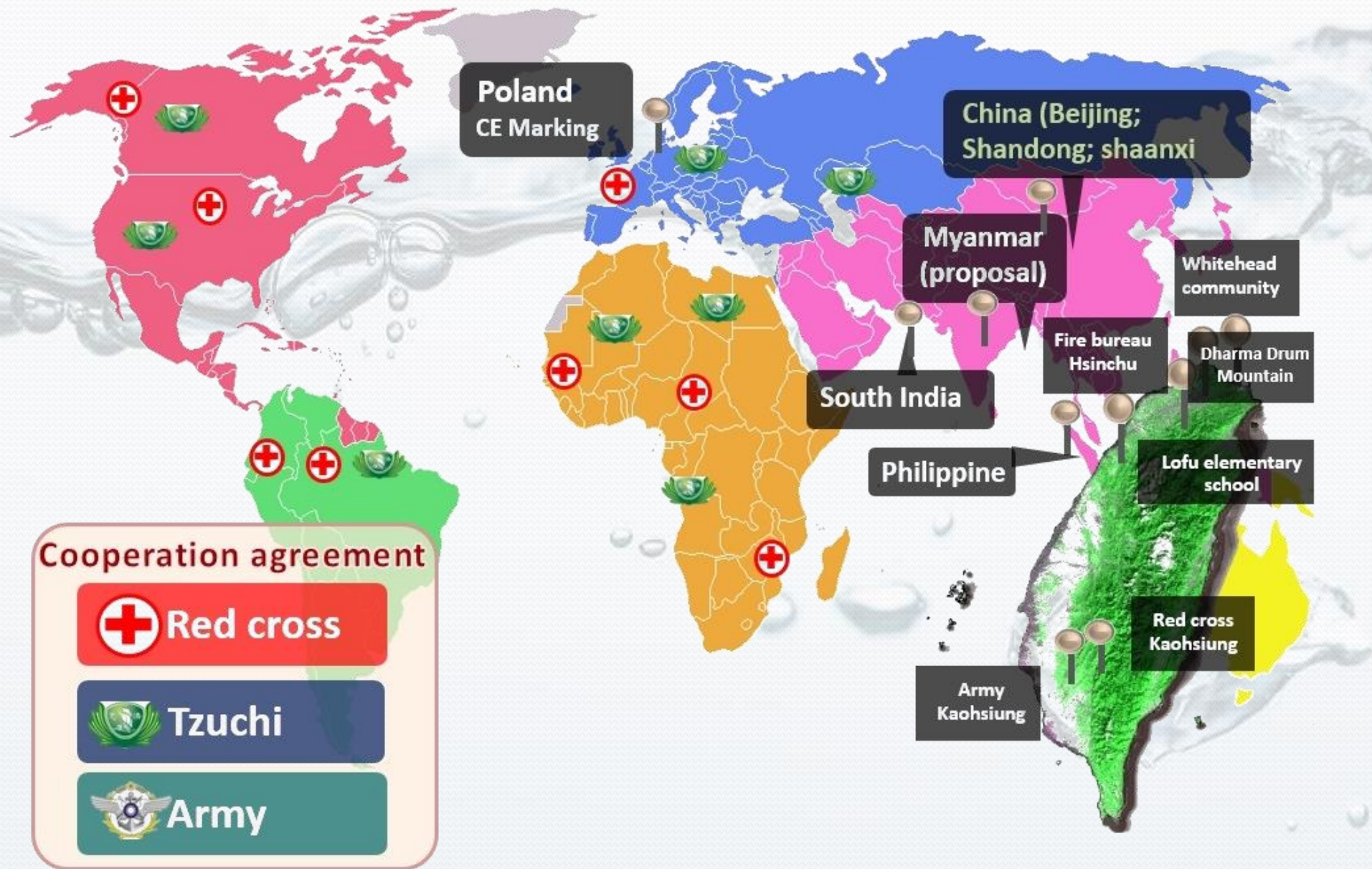
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Q Water Project in the World



Taiwan



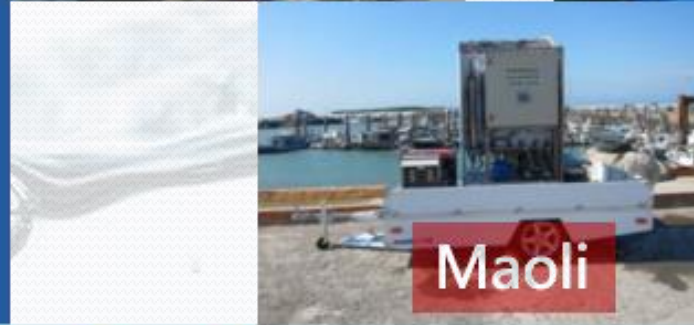
Features

- ✓ 80 % energy saving for DC Q water.
- ✓ Stable and auto-operation in 4 years.

Difficulties

- ✓ High turbidity water (frequently typhoon and rain, mudflow)
- ✓ Far distance between community (aborigines)

Taiwan - relieving disaster



Features

- ✓ For emergency relieving disaster.

Difficulties

- ✓ Difficult for system clean.
(chemical is not easy to use in disaster)

China



Aquaponic green house in Beijing



Ceramic factory



LOCATION

Features

- ✓ Industrial application.
(Aquaponics and ceramic factory)

Difficulties

- ✓ Hard water
- ✓ Fast development result in serious pollution
- ✓ Centralized urbanization. Lack of clean water in rural area.

Thailand

Tzu chi water treatment boat



LOCATION

Features

- ✓ Integrate with transportation.
- ✓ Suitable for relieving disaster.

Difficulties

- ✓ Flood in urban area.
- ✓ Emergency.
- ✓ Bad raw water quality.

Philippine



Typhoon Haiyan in philippine



Leyte

LOCATION

Features

- ✓ Emergency case (after Typhoon Haiyan).
- ✓ Install 3 Q water in one day.

Difficulties

- ✓ Short time to establish the equipment.
- ✓ Operation.
- ✓ Far distance between community.
- ✓ Hard water and brackish water.

Poland



for MPWiK

Poland



LOCATION

Features

- ✓ CE marker.
- ✓ for simple water treatment system.
- ✓ high potential for patent transfer.

Difficulties

- ✓ High cost for transportation.

South India



Tibetan village in south India



LOCATION

Features

- ✓ Increase the working opportunity.
- ✓ 0.17 US dollars/L .

Difficulties

- ✓ Terrible public hygiene.
- ✓ Far distance between community.
- ✓ Hard water(TDS 600~1100 mg/L).
- ✓ Poor and the education is not enough.

Myanmar



LOCATION

Features

- ✓ Increase the working opportunity.

Difficulties

- ✓ Terrible public hygiene.
- ✓ Far distance between community.
- ✓ Hard water and brackish water.
- ✓ Poor and the education is not enough.



Q Water

Just believe it !!

Save water

Promote Economics